

CLAIMS

What is claimed is:

- 5 1. A zinc finger protein that binds to a target site, said zinc finger protein comprising a first (F1), a second (F2), and a third (F3) zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, said target site comprising, in 3' to 5' direction, a first (S1), a second (S2), and a third (S3) target subsite, each target subsite having the nucleotide sequence GNN, wherein if S1 comprises GAA, F1 comprises the amino acid
10 sequence QRSNLVR; if S2 comprises GAA, F2 comprises the amino acid sequence QSGNLAR; if S3 comprises GAA, F3 comprises the amino acid sequence QSGNLAR; if S1 comprises GAG, F1 comprises the amino acid sequence RSDNLAR; if S2 comprises GAG, F2 comprises the amino acid sequence RSDNLAR; if S3 comprises GAG, F3 comprises the amino acid sequence RSDNLTR; if S1 comprises GAC, F1 comprises the
15 amino acid sequence DRSNLTR; if S2 comprises GAC, F2 comprises the amino acid sequence DRSNLTR; if S3 comprises GAC, F3 comprises the amino acid sequence DRSNLTR; if S1 comprises GAT, F1 comprises the amino acid sequence QSSNLAR; if S2 comprises GAT, F2 comprises the amino acid sequence TSGNLVR; if S3 comprises GAT, F3 comprises the amino acid sequence TSANLSR; if S1 comprises GGA, F1
20 comprises the amino acid sequence QSGHLAR; if S2 comprises GGA, F2 comprises the amino acid sequence QSGHLQR; if S3 comprises GGA, F3 comprises the amino acid sequence QSGHLQR; if S1 comprises GGG, F1 comprises the amino acid sequence RSDHLAR; if S2 comprises GGG, F2 comprises the amino acid sequence RSDHLSR; if S3 comprises GGG, F3 comprises the amino acid sequence RSDHLSR; if S1 comprises
25 GGC, F1 comprises the amino acid sequence DRSHLRT; if S2 comprises GGC, F2 comprises the amino acid sequence DRSHLAR; if S1 comprises GGT, F1 comprises the amino acid sequence QSSHLTR; if S2 comprises GGT, F2 comprises the amino acid sequence TSGHLSR; if S3 comprises GGT, F3 comprises the amino acid sequence TSGHLVR; if S1 comprises GCA, F1 comprises the amino acid sequence QSGSLTR; if
30 S2 comprises GCA, F2 comprises QSGDLTR; if S3 comprises GCA, F3 comprises QSGDLTR; if S1 comprises GCG, F1 comprises the amino acid sequence RSDDLTR; if S2 comprises GCG, F2 comprises the amino acid sequence RSDDLQR; if S3 comprises

GCG, F3 comprises the amino acid sequence RSDDLTR; if S1 comprises GCC, F1 comprises the amino acid sequence ERGTLAR; if S2 comprises GCC, F2 comprises the amino acid sequence DRSDLTR; if S3 comprises GCC, F3 comprises the amino acid sequence DRSDLTR; if S1 comprises GCT, F1 comprises the amino acid sequence
5 QSSDLTR; if S2 comprises GCT, F2 comprises the amino acid sequence QSSDLTR; if S3 comprises GCT, F3 comprises the amino acid sequence QSSDLQR; if S1 comprises GTA, F1 comprises the amino acid sequence QSGALTR; if S2 comprises GTA, F2 comprises the amino acid sequence QSGALAR; if S1 comprises GTG, F1 comprises the amino acid sequence RSDALTR; if S2 comprises GTG, F2 comprises the amino acid
10 sequence RSDALSR; if S3 comprises GTG, F3 comprises the amino acid sequence RSDALTR; if S1 comprises GTC, F1 comprises the amino acid sequence DRSALAR; if S2 comprises GTC, F2 comprises the amino acid sequence DRSALAR; and if S3 comprises GTC, F3 comprises the amino acid sequence DRSALAR.

15 2. The zinc finger protein of claim 1, wherein S1 comprises GAA and F1 comprises the amino acid sequence QRSNLVR.

20 3. The zinc finger protein of claim 1, wherein S2 comprises GAA and F2 comprises the amino acid sequence QSGNLAR.

4. The zinc finger protein of claim 1, wherein S3 comprises GAA and F3 comprises the amino acid sequence QSGNLAR.

25 5. The zinc finger protein of claim 1, wherein S1 comprises GAG and F1 comprises the amino acid sequence RSDNLAR.

6. The zinc finger protein of claim 1, wherein S2 comprises GAG and F2 comprises the amino acid sequence RSDNLAR.

30 7. The zinc finger protein of claim 1, wherein S3 comprises GAG and F3 comprises the amino acid sequence RSDNLTR.

8. The zinc finger protein of claim 1, wherein S1 comprises GAC and F1 comprises the amino acid sequence DRSNLTR.

5 9. The zinc finger protein of claim 1, wherein S2 comprises GAC and F2 comprises the amino acid sequence DRSNLTR.

10. The zinc finger protein of claim 1, wherein S3 comprises GAC and F3 comprises the amino acid sequence DRSNLTR.

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11. The zinc finger protein of claim 1, wherein S1 comprises GAT and F1 comprises the amino acid sequence QSSNLAR.

12. The zinc finger protein of claim 1, wherein S2 comprises GAT and F2 comprises the amino acid sequence TSGNLVR.

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13. The zinc finger protein of claim 1, wherein S3 comprises GAT and F3 comprises the amino acid sequence TSANLSR.

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14. The zinc finger protein of claim 1, wherein S1 comprises GGA and F1 comprises the amino acid sequence QSGHLAR.

15. The zinc finger protein of claim 1, wherein S2 comprises GGA and F2 comprises the amino acid sequence QSGHLQR.

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16. The zinc finger protein of claim 1, wherein S3 comprises GGA and F3 comprises the amino acid sequence QSGHLQR.

17. The zinc finger protein of claim 1, wherein S1 comprises GGG and F1 comprises the amino acid sequence RSDHLAR.

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18. The zinc finger protein of claim 1, wherein S2 comprises GGG and F2
comprises the amino acid sequence RSDHLR.

19. The zinc finger protein of claim 1, wherein S3 comprises GGG and F3
5 comprises the amino acid sequence RSDHLR.

20. The zinc finger protein of claim 1, wherein S1 comprises GGC and F1
comprises the amino acid sequence DRSHLTR.

10 21. The zinc finger protein of claim 1, wherein S2 comprises GGC and F2
comprises the amino acid sequence DRSHLAR.

22. The zinc finger protein of claim 1, wherein S1 comprises GGT and F1
comprises the amino acid sequence QSSHLTR.

15 23. The zinc finger protein of claim 1, wherein S2 comprises GGT and F2
comprises the amino acid sequence TSGHLR.

20 24. The zinc finger protein of claim 1, wherein S3 comprises GGT and F3
comprises the amino acid sequence TSGHLVR.

25 25. The zinc finger protein of claim 1, wherein S1 comprises GCA and F1
comprises the amino acid sequence QSGSLTR.

26. The zinc finger protein of claim 1, wherein S2 comprises GCA and F2
comprises the amino acid sequence QSGDLTR.

27. The zinc finger protein of claim 1, wherein S3 comprises GCA and F3
comprises the amino acid sequence QSGDLTR.

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28. The zinc finger protein of claim 1, wherein S1 comprises GCG and F1
comprises the amino acid sequence RSDDLTR.

29. The zinc finger protein of claim 1, wherein S2 comprises GCG and F2
5 comprises the amino acid sequence RSDDLQR.

30. The zinc finger protein of claim 1, wherein S3 comprises GCG and F3
comprises the amino acid sequence RSDDLTR.

10 31. The zinc finger protein of claim 1, wherein S1 comprises GCC and F1
comprises the amino acid sequence ERGTLAR.

32. The zinc finger protein of claim 1, wherein S2 comprises GCC and F2
comprises the amino acid sequence DRSDLTR.

15 33. The zinc finger protein of claim 1, wherein S3 comprises GCC and F3
comprises the amino acid sequence DRSDLTR.

20 34. The zinc finger protein of claim 1, wherein S1 comprises GCT and F1
comprises the amino acid sequence QSSDLTR.

35. The zinc finger protein of claim 1, wherein S2 comprises GCT and F2
comprises the amino acid sequence QSSDLTR.

25 36. The zinc finger protein of claim 1, wherein S3 comprises GCT and F3
comprises the amino acid sequence QSSDLQR.

37. The zinc finger protein of claim 1, wherein S1 comprises GTA and F1
comprises the amino acid sequence QSGALTR.

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38. The zinc finger protein of claim 1, wherein S2 comprises GTA and F2 comprises the amino acid sequence QSGALAR.

39. The zinc finger protein of claim 1, wherein S1 comprises GTG and F1 comprises the amino acid sequence RSDALTR.

40. The zinc finger protein of claim 1, wherein S2 comprises GTG and F2 comprises the amino acid sequence RSDALSR.

41. The zinc finger protein of claim 1, wherein S3 comprises GTG and F3 comprises the amino acid sequence RSDALTR.

42. The zinc finger protein of claim 1, wherein S1 comprises GTC and F1 comprises the amino acid sequence DRSALAR.

43. The zinc finger protein of claim 1, wherein S2 comprises GTC and F2 comprises the amino acid sequence DRSALAR.

44. The zinc finger protein of claim 1, wherein S3 comprises GTC and F3 comprises the amino acid sequence DRSALAR.

45. A polypeptide comprising a zinc finger protein according to claim 1.

46. A polypeptide according to claim 45, further comprising at least one functional domain.

47. A polynucleotide encoding a zinc finger protein according to claim 1.

48. A polynucleotide encoding a polypeptide according to claim 45.

49. A polynucleotide encoding a polypeptide according to claim 46.